

CLAIMS:

1. System (100A, 100B, 200, 300) for operating a plurality of loads (1A, 1B, 1C) having a negative dynamical impedance using a common power source; the system comprising N branches (110, 120, 130) connected in parallel between a first input node (A) and a second input node (102), N being an integer larger than 2;
5 wherein each branch comprises a load arrangement containing at least one load connected in series;
the N load arrangements being selected such that, if each branch conducts the same current, the voltage drops over all loads are mutually substantially equal;
the system further comprising current equalizing means for ensuring that the currents in all
10 branches are mutually substantially equal.
2. System (100; 300) according to claim 1, wherein said current equalizing means comprise a plurality of N-1 current equalizing devices (151; 152), wherein N-1 pairs of branches (110, 120; 120, 130) are always coupled together through one associated
15 equalizing device (151; 152).
3. System (100; 300) according to claim 2, wherein the current equalizing devices comprise equalizing transformers, and wherein each equalizing transformer (151; 152) has one winding (114; 125) connected in series with the load arrangement (1A; 1B) of a
20 first branch (110; 120) and has another winding (124; 135) connected in series with the load arrangement (1B; 1C) of a second branch (120; 130).
4. System (300) according to claim 2, further comprising an N-th equalizing device (153) coupling together an N-th pair of branches (130, 110).
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5. System (300) according to claim 4, wherein the current equalizing devices comprise equalizing transformers, and wherein each branch (110; 120; 130) comprises a series arrangement of one load arrangement (1A; 1B; 1C) and two windings (114, 116; 124, 125; 135, 136) of corresponding transformers (151, 153; 151, 152; 152, 153).

6. System (200) according to claim 1, wherein said current equalizing means comprise a plurality of N-1 equalizing transformers (151, 152), wherein an equalizing transformer (151) has one winding (114) connected in series with one load arrangement (1A) and has another winding (124) connected in series with a parallel arrangement of a plurality of load branches (120, 130).
7. System according to claim 6, wherein said parallel arrangement of a plurality of load branches (120, 130) comprises another equalizing transformer (152) having a first winding (125) connected in series with one load arrangement (1B) and having another winding (135) connected in series with a parallel arrangement of at least one load branch (130).
8. System according to claim 7, wherein said first equalizing transformer (151) has its other winding (124) connected in series with a parallel connection of the two windings (125, 135) of said other equalizing transformer (152).
9. System (300) according to claim 1, wherein said current equalizing means comprise a plurality of $(1/2) \cdot N \cdot (N-1)$ current equalizing devices (151, 152, 153), each pair of branches (110, 120; 110, 130; 120, 130) always being coupled together through one associated equalizing device (151; 152; 153).
10. System according to claim 1, wherein each branch (110; 120; 130) comprises a series arrangement of a load arrangement (1A; 1B; 1C) and at least one winding (114; 124, 125; 135) of at least one equalizing transformer (151; 151, 152; 152), wherein said load arrangement (1A; 1B; 1C) is arranged between a high-voltage input node (A) and said at least one winding (114; 124, 125; 135) of said at least one equalizing transformer (151; 151, 152; 152).
11. System according to claim 1, wherein a load comprises a gas discharge lamp.
12. System according to claim 1, wherein all loads are mutually substantially identical.

13. System according to claim 1, wherein $N=3$.
14. System according to claim 1, having an input terminal connected to the first input node (A) for coupling to an output terminal of a high frequency driver, and having a plurality of lamp sockets for receiving lamps (1A, 1B, 1C).
15. System according to claim 1, having an input connector for coupling to a lamp socket of a high frequency driver, the input connector having a design similar to a lamp fitting or a lamp foot.
16. Module (M1, M2, M3, M4) for a system according to any of the previous claims, the module comprising:
a first input terminal (501) connected to a first contact (505) of a lamp socket;
a second input terminal (502) connected to a first terminal (511a) of a first winding (511) of an equalizing transformer (510);
a third input terminal (503) connected to a second terminal (511b) of the first winding (511) of the equalizing transformer (510);
a fourth input terminal (504) connected to a first terminal (512a) of a second winding (512) of the equalizing transformer (510);
a second contact (506) of the lamp socket being connected to a second terminal (512b) of the second winding (512) of the equalizing transformer (510).